

P/ NT COOPERATION TREAT

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C.20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 08 June 2000 (08.06.00)	
International application No. PCT/AU99/00909	Applicant's or agent's file reference
International filing date (day/month/year) 19 October 1999 (19.10.99)	Priority date (day/month/year) 19 October 1998 (19.10.98)
Applicant SAVUR, Sanjay et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 18 May 2000 (18.05.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Nestor Santesso Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/AU 99/00909	International filing date (<i>day/month/year</i>) 19 October 1999	(Earliest) Priority Date (<i>day/month/year</i>) 19 October 1998
Applicant MITSUBISHI AUSTRALIA LTD et al.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 7 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the title, ☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract, ☐ the text is approved as submitted by the applicant

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ None of the figures

☐ because the applicant failed to suggest a figure

☐ because this figure better characterizes the invention

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 99/00909

Box 1 Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
See attached sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☒ No protest accompanied the payment of additional search fees.

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The present invention provides apparatus and methods for adjusting the atmosphere within a substantially sealed chamber (11) containing respiring produce. The chamber of the present invention includes inlet means (100) to permit ambient atmosphere to enter the chamber, and outlet means (20) to permit chamber atmosphere to exit the chamber. Methods using apparatus of the present invention comprise:

- (a) monitoring the oxygen concentration within the chamber;
- (b) following detection that the oxygen concentration in the chamber has fallen below a predetermined amount, opening the inlet means so that the amount of oxygen in the chamber increases; and
- (c) removing carbon dioxide from the chamber atmosphere substantially at a predetermined rate, the predetermined rate having been selected such that the carbon dioxide concentration within the chamber atmosphere does not substantially exceed a predetermined amount.

The methods may also comprise opening the inlet means for a time that is approximately proportional to the difference between the detected oxygen concentration and an oxygen setpoint.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 99/00909

A. CLASSIFICATION OF SUBJECT MATTERInt Cl⁶: B65D 81/24, 85/50, A23L 3/3409

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D 81/00, 81/18, 81/24, 85/50, A23L 3/34, 3/3409, 3/3418, 3/3427, 3/3436, 3/3445

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPAT (and keywords)**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 92/15499 A (CSIRO) 17 September 1992 Whole document	35-37,39,69-72,75,81, 96-99,102,108-111, 114-116,150
X	WO 91/15719 A (TRANSFRESH CORPORATION) 17 October 1991 Whole document	35-37,39,69-72,81, 96-99,108-111,116,150
X	EP 0353021 A (TRANSFRESH CORPORATION) 31 January 1990 Whole document	35-37,39,69-72,81, 96-99,108-111,116, 132-144,150

☒ Further documents are listed in the
continuation of Box C☒ See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
21 January 2000

Date of mailing of the international search report

31 JAN 2000

Name and mailing address of the ISA/AU
AUSTRALIAN PATENT OFFICE
PO BOX 200
WODEN ACT 2606
AUSTRALIA
Facsimile No.: (02) 6285 3929

Authorized officer

M.J. O'ROURKE
Telephone No.: (02) 6283 2017

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 99/00909

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 95/05753 A (DOW CHEMICAL COMPANY) 2 March 1995 Whole document	143,144
X	Patent Abstracts of Japan, M-985, page 6 JP 2-82083 A (RYUHEI FUKUDA) 22 March 1990 Abstract	143,144
X	EP 0136042 A (SHIPPING CORPORATION OF NEW ZEALAND LIMITED) 3 April 1985 Whole document	35-37,39,40, 69-72,81,96- 99,108-111, 116,132-144, 150
X	US 5322701 A (CULLEN ET AL.) 21 June 1994 Whole document	147
X	EP 0142903 A (DOUWE EGBERTS KON) 29 May 1985 Whole document	147
X	US 4079152 A (BEDROSIAN ET AL.) 14 March 1978 Whole document	147

Box**Continuation of Box II**

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1 to 34, 41 to 68, 82 to 95, 117 to 131, 145, 146 and 149 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, admitting ambient air, and removing carbon dioxide substantially at a predetermined rate. It is considered that the carbon dioxide removal comprises a first "special technical feature".
2. Claims 38, 73, 100, and 112 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, and admitting ambient air. It is considered that the comparison with a number of pre-determined ranges comprises a second "special technical feature".
3. Claims 74, 76, 101, 103 and 113 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels and admitting ambient air. It is considered that the leakage paths associated with the door comprise a third "special technical feature".
4. Claims 77 to 80 and 104 to 107 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, and admitting ambient air. It is considered that the receptacle having a fan comprises a fourth "special technical feature".
5. Claim 148 is directed to a method of adjusting the level of carbon dioxide in a container making use of a specific mathematical formula. It is considered that this feature comprises a fifth "special technical feature". This claim does not include any steps relating to monitoring oxygen levels.
6. Claims 151 and 152 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, and admitting ambient air. It is considered that the calculation of the oxygen setpoint derived from the described mathematical formula comprises a sixth "special technical feature".

The remaining claims were found to lack either novelty or an inventive step, and hence possess no "special technical features."

These groups of inventions are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is the adjustment of atmosphere in a chamber. However this concept is not novel in the light of either common general knowledge or the documents cited in this ISR. Therefore these claims lack unity a posteriori.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/AU 99/00909

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
WO	92/15499	AU	13221/92	EP	573502	NZ	241766
		US	5443851	ZA	9201466		
WO	91/15719	AU	74301/91	EP	457431	NZ	237801
		ZA	9102658	US	5872721		
EP	353021	AU	38968/89	JP	2-167027	NZ	225620
		US	4987745	ZA	8905673		
EP	136042	AU	32431/84	JP	61-025443	NZ	205453
		US	4642996	US	4716739	ZA	8406661
WO	95/05753	AU	74645/94				
JP	2-082083	NIL					
US	5322701	NIL					
EP	142903	NL	8304015				
US	4079152	US	4423080				
END OF ANNEX							

P NT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: McMASTER OBERIN ARTHUR ROBINSON & HEDDERWICKS GPO BOX 1776Q MELBOURNE VIC 3001		PCT NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)	
Applicant's or agent's file reference 110134		Date of mailing <i>day/month/year</i> 04 OCT 2000	
International application No. PCT/AU99/00909		International filing date 19 October 1999	
Priority date 19 October 1998		IMPORTANT NOTIFICATION	
Applicant mitsubishi australia limited et al			

1.	The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2.	A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3.	Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translations to those Offices.
4.	REMINDER The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301). Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned. For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide

Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer M.J. O'ROURKE Telephone No. (02) 6283 2017
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 110134	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International application No. PCT/AU99/00909	International filing date (<i>day/month/year</i>) 19 October 1999	Priority Date (<i>day/month/year</i>) 19 October 1998
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ B65D 81/24, 85/50, A23L 3/3409		
Applicant MITSUBISHI AUSTRALIA LIMITED et al		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 5 sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of sheet(s).
3. This report contains indications relating to the following items:	
I	<input checked="" type="checkbox"/> Basis of the report
II	<input type="checkbox"/> Priority
III	<input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	<input checked="" type="checkbox"/> Lack of unity of invention
V	<input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	<input type="checkbox"/> Certain documents cited
VII	<input type="checkbox"/> Certain defects in the international application
VIII	<input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 18 May 2000	Date of completion of the report 29 September 2000
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer M.J. O'ROURKE Telephone No. (02) 6283 2017

I. Basis of the report

1. With regard to the **elements** of the international application:*
- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
 pages , as amended (together with any statement) under Article 19,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , received on with the letter of
2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
 These elements were available or furnished to this Authority in the following language which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, was on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
4. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.
5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

(see extra sheet)

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-34,38,41-68,73,74,76-80,82-95,100,101,103-107,112,113,117-131,145,146,148,149,151,152	YES
	Claims 35-37,39,40,69-72,75,81,96-99,102,108-111,114-116,132-144,147,150	NO
Inventive step (IS)	Claims 1-34,38,41-68,73,74,76-80,82-95,100,101,103-107,112,113,117-131,145,146,148,149,151,152	YES
	Claims 35-37,39,40,69-72,75,81,96-99,102,108-111,114-116,132-144,147,150	NO
Industrial applicability (IA)	Claims 1 to 152	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

1. WO 92/15499 discloses the features of claims 35-37,39,69-72,75,81,96-99,102,108-111,114-116,150
2. WO 91/15719 discloses the features of claims 35-37,39,69-72,81,96-99,108-111,116,150
3. EP 353021 discloses the features of claims 35-37,39,69-72,81,96-99,108-111,116,132-144,150
4. WO 95/05753 discloses the features of claims 143,144
5. JP 2-82083 (abstract) discloses the features of claims 143,144
6. EP 136042 discloses the features of claims 35-37,39,40,69-72,81,96-99,108-111,116,132-144,150
7. US 5322701 discloses the features of claim 147
8. EP 142903 discloses the features of claim 147
9. US 4079152 discloses the features of claim 147

The remaining claims are novel and inventive. (The novelty-conferring special technical features of these claims are listed in Box IV in the discussion of lack of unity of invention.)

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of IV

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Examining Authority has found that there are different inventions as follows:

1. Claims 1 to 34, 41 to 68, 82 to 95, 117 to 131, 145, 146 and 149 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, admitting ambient air, and removing carbon dioxide substantially at a predetermined rate. It is considered that the carbon dioxide removal comprises a first "special technical feature".
2. Claims 38, 73, 100, and 112 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, and admitting ambient air. It is considered that the comparison with a number of pre-determined ranges comprises a second "special technical feature".
3. Claims 74, 76, 101, 103 and 113 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels and admitting ambient air. It is considered that the leakage paths associated with the door comprise a third "special technical feature".
4. Claims 77 to 80 and 104 to 107 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, and admitting ambient air. It is considered that the receptacle having a fan comprises a fourth "special technical feature".
5. Claim 148 is directed to a method of adjusting the level of carbon dioxide in a container making use of a specific mathematical formula. It is considered that this feature comprises a fifth "special technical feature". This claim does not include any steps relating to monitoring oxygen levels.
6. Claims 151 and 152 relate to a method of adjusting atmosphere in a sealed chamber with inlet means and outlet means, including the steps of monitoring oxygen levels, and admitting ambient air. It is considered that the calculation of the oxygen setpoint derived from the described mathematical formula comprises a sixth "special technical feature".

The remaining claims were found to lack either novelty or an inventive step, and hence possess no "special technical features."

These groups of inventions are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is the adjustment of atmosphere in a chamber. However this concept is not novel in the light of either common general knowledge or the documents cited in this ISR. Therefore these claims lack unity a posteriori.

The International Search Report covered all of the claims.